

SYLLABUS

PAPER - 1

PHYSICS

Units and Measurement, Kinematics (Motion in One Dimension), Vectors, Kinematics (Motion in Two and Three Dimensions), Relative motion, Laws of Motion, Work, Energy and Power, Center of mass, Conservation of momentum Collisions, Circular motion, Rotational Motion, Kinetic theory of gases, Heat and Thermodynamics (second law+reversible and irreversible process, carnot engine+thermal expansion + calorimetry), Transfer of Heat + convection, Electrostatics, Current Electricity (color code of resistors), Thermal Effects of Current, Magnetic Effects of Current, Pure magnetism (current loop as magnetic dipole and its moment), bar magnet, magnetic field lines, earth magnetism, para-dia-ferro), Magnets, susceptibility and permeability, hysteresis, electromagnets and permanent magnets, Magnetostatics, Electromagnetics Induction and Alternating Currents (ac generator and transformer, wattless current, quality factor), Oscillations (forced and damped oscillations), Wave & Sound, Ray Optics (microscope and astronomical telescope), Wave Optics [(diffraction (single slit), resolving power of microscope and astronomical telescope, polarisation, brewsters law, uses of polaroids and polarised light)], Electromagnetic Waves, Experimental Skills in Physics, Gravitation, Properties of Solids and Fluids + streamline flow, turbulent flow, reynolds number.

CHEMISTRY

Atomic Structure, Chemical Kinetics, Chemical Equilibrium, Balancing of Redox Reaction, Ionic Equilibrium, Chemical Bonding, s-Block and Hydrogen, Boron and Carbon Family, Periodic Properties, Organic Chemistry (Including GOC), Biomolecules, Group V to VIII, Transition Elements & Coordination Compounds, f-Block elements, Liquid Solution, Surface Chemistry, Electrochemistry, Thermodynamics & Thermochemistry, Stoichiometry, Gaseous State, Solid State, Environmental Chemistry.

MATHEMATICS

Sets, Relations and Functions, Limits, Continuity and Differentiability, Application of Derivatives, Indefinite Integration, Definite Integrals and their Properties, Area, Differential Equations, Mathematical Reasoning, Volume & Surface, Trigonometric Ratios and Identities, Trigonometric Equations, Heights and distance, Solution of triangle, Straight Lines, Circles, Parabola, Ellipse, Hyperbola, Mathematical Induction, Progression and Series, Quadratic Equations and Expressions, Complex Numbers, Binomial Theorem, Matrices, Determinants, Permutation and Combination, Statistics (Measures of Dispersion) and Probability, Probability Distribution, Binomial Distribution.

PAPER - 2

PHYSICS

Kinematics, Laws of Motion, Work, Energy and Power, Conservation of Momentum, Rotation, Heat and Thermodynamics, Electrostatics, Current Electricity, Magnetics, Electromagnetic Induction, A.C. Circuit, Gravitation, Fluids, Simple Harmonic Motion, Waves & Sound, Optics

CHEMISTRY

Atomic Structure, Chemical Kinetics, Chemical Equilibrium, Balancing of Redox Reaction, Ionic Equilibrium, Chemical Bonding, s-Block and Hydrogen, Boron and Carbon Family, Organic Chemistry (Including GOC), Biomolecules, Group V to VIII, Transition Elements & Coordination Compounds, Liquid Solution, Electrochemistry, Thermodynamics & Thermochemistry, Stoichiometry, Gaseous State, Solid State

MATHEMATICS

Functions, Limits, Continuity and Differentiability, Application of Derivatives, Indefinite Integration, Definite Integrals and their properties, Area, Differential Equations, Trigonometric ratios and Identities, Trigonometric equations, Solution of triangles, Straight Lines, Circles, Parabola, Ellipse, Hyperbola, Progression and Series, Quadratic Equations and Expressions, Complex Numbers, Binomial Theorem, Matrices, Determinants, Permutation and Combination, Probability